



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/817,963

03/27/2001

Klaus Lowack

GR 00 P 1583

9891

24131 7590 06/13/2007
LERNER GREENBERG STEMER LLP
P O BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER

TALBOT, BRIAN K

ART UNIT

PAPER NUMBER

1762

MAIL DATE

DELIVERY MODE

06/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/817,963
Filing Date: March 27, 2001
Appellant(s): LOWACK ET AL.

MAILED
JUN 13 2007
GROUP 1700

Don Paris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 29, 2007 appealing from the Office
action mailed July 12, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is substantially correct. Appellant included examples for independent claim 4 which appear to be extraneous as they do not add anything to claim 4.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Art Unit: 1762

5,679,498	Greenwood et al.	10-1997
-----------	------------------	---------

5,800,858	Bickford et al.	9-1998
-----------	-----------------	--------

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calabrese et al. (5,468,597) in combination with Greenwood et al. (5,679,498) or vice versa further in combination with Bickford et al. (5,800,858)

Calabrese et al. (5,468,597) teaches preparing a substrate, forming ligating groups over said substrate, forming a photoresist and imaging over the ligating layer, selectively applying a seeding layer to the ligating layer and plating (col. 3, lines 40-55). The photoresist may also be applied to the substrate prior to applying the ligating layer. The ligating layer can be formed by plasma or vapor phase modification (col. 4, lines 45-55) The substrate is silicon. Calabrese et al. (5,468,597) teaches a planarizing layer can be applied to the substrate prior to the ligating film and may help bond more readily the substrate to the ligating film (col. 3, line 65 – col. 4, line 17). In Example 18, a planarizing layer is applied to the substrate at a thickness of 1 micron, exposed to plasma, photoresist was applied, developed and seeding and metallization were performed (see also Example 19).

It is noted that the claimed “activating step” is achieved by the prior art by “ligating layer”.

Greenwood et al. (5,679,498) teaches a method for producing high density multi-layered integrated circuits carriers. Coating a base surface with a photosensitive dielectric material, curing and developing the photosensitive dielectric layer, depositing a catalyst to form a sensitized dielectric layer, applying a photoresist layer, developing and curing the photoresist layer, forming conductors on the exposed dielectric layer and repeating the steps (abstract and col. 8, lines 10-35)). The photosensitive layer having a thickness of 0.0007-0.0009 inches. The imaging and patterning is performed on both dielectric layers (photosensitive and photoresist).

Calabrese et al. (5,468,597) fails to teach performing this process comprising two insulating layers overlying a substrate. Calabrese et al. (5,468,597) does teach a polymeric planarizing layer but does not state that the polymeric layer is insulating.

Greenwood et al. (5,679,498) fails to teach selective plating of the seeding layer after patterning the photosensitive layer.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Calabrese et al. (5,468,597) process by performing the process on an insulating layer atop a substrate as evidenced by Greenwood et al. (5,679,498) or to have modified Greenwood et al. (5,679,498) process by performing a "pretreatment" step comprising pretreating/patterning as evidenced by Calabrese et al. (5,468,597) with the expectation of achieving similar results, i.e. selective metallization.

Greenwood et al. (5,679,498) and Calabrese et al. (5,468,597) fail to teach the photosensitive thickness of 50 microns (2.1 mils).

Bickford et al. (5,800,858) teaches a similar process whereby the thickness of the polymer films are from 0.3 to 5 mils in thickness which are imaged, developed and seeded prior

Art Unit: 1762

to metallization. More than one layer of the polymer can be utilized with the layers being of the same polymeric material. Bickford et al. (5,800,858) teaches a first insulation layer is activated, and a second insulation layer is embodied on the first activated insulation layer. The second insulation layer is subsequently structured so that partial areas of the first activated insulation layer are freed. The partial areas are subsequently seeded and metallized.

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Greenwood et al. (5,679,498) and Calabrese et al. (5,468,597) process by utilizing a photosensitive thickness of that claimed with the expectation of obtaining similar results.

(10) Response to Argument

Appellant argued that the photoresist layer in Greenwood et al. (5,679,498) is not the same as the photosensitive material in the claimed subject matter. Also that there is no suggestions that the photoresist is or could be an insulating material.

The Examiner disagrees. A “photoresist”, as correctly stated by Appellant, chemical coating that hardens or cures with exposure to light”. The coating “hardening or curing” clearly suggests to one skilled in the art that the coating is or could be an insulating material. Furthermore, Calabrese teaches examples of photoresist material which clearly suggest that they are insulative (col. 8, lines 17- col. 9, line 2). Hence, the photoresist would be “sensitive” to exposure to light and therefore would meet the limitation as being “photosensitive” as defined by the claims and instant invention as the photoresist can include a photoinitiator as well.

Art Unit: 1762

Appellant argued that neither Calabrese nor Greenwood disclose the feature of “a second insulating layer applied to the first insulating layer”.

The Examiner disagrees. Regarding Calabrese, as noted above, teaches forming a planarizing layer and a photoresist layer. Regarding Greenwood failing to teach the two insulating layers, Greenwood teaches a photosensitive and photoresist layers (see above). In addition, as noted by Appellant on pg. 12 of the Appeal Brief, Bickford also teaches this limitation of one insulation layer applied over another after activating the first insulating layer (also see pg. 23, lines 25-40).

In addition it has been well settled that the test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In Re McLaughlin* 170 USPQ 209 (CCPA 1971); *In Re Rosselet* 146 USPQ 183 (CCPA 1969). References are evaluated by what they collectively suggest to one versed in the art, rather than by their specific disclosures. *In Re Simon*, 174 USPQ 114 (CCPA 1972); *In Re Richman* 165 USPQ 509, 514 (CCPA 1970). The combination of references clearly teach a first insulation layer being activated, applying a second insulation on the first activated insulation layer. The second insulation layer is subsequently structured so that partial areas of the first activated insulation layer are exposed. The partial areas are subsequently seeded and metallized.

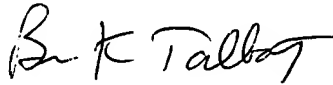
Art Unit: 1762

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

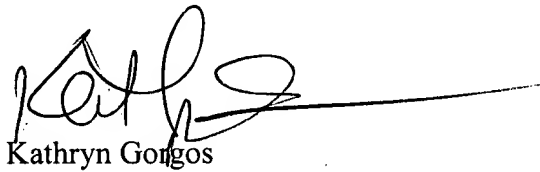


Brian K. Talbot

Conferees:



Timothy H. Meeks



Kathryn Gongos